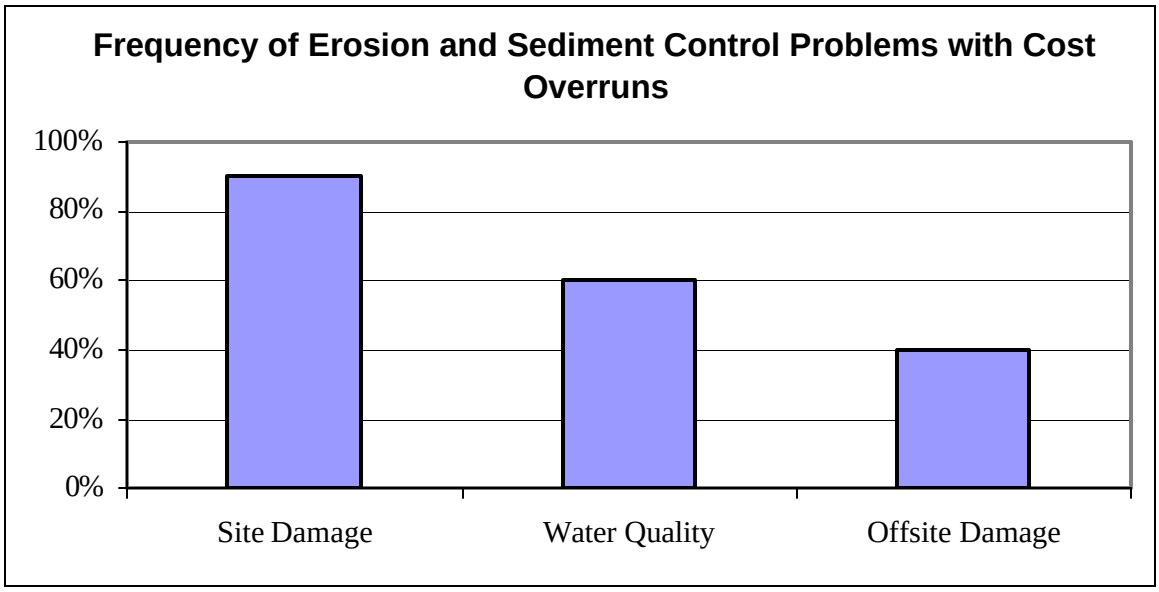
PERFORMANCE MEASURES OF WSDOT EROSION CONTROL PROGRAM AND OVERALL AGENCY

What Is Erosion & Sediment Control?

Erosion control is the prevention of unwanted soil movement. Sediment control is removing sediment from water after erosion has occurred.

Why Do We Do It?

Erosion can cause damage to construction sites, impact water quality, and damage adjacent properties. All three types of erosion impacts can lead to cost overruns and delayed project delivery. A survey of project engineers that managed projects experiencing erosion problems between 1995 and 1999 indicated how often each type of erosion impact led to cost increases or delays. The frequency of the different types of damage leading to project delivery problems follows a logical progression because onsite erosion precedes offsite impacts.



The following example illustrates just how costly this scenario is. A project located in Western Washington was hit by a severe 2-hour storm in the summer of 1997. Inadequate erosion control left this project unprepared for the storm and it cost WSDOT $185,000 in site damage, $74,000 in fines for water quality violations, and $174,000 to mitigate damage to adjacent properties. Additional unmeasured erosion costs include 15% for administration and $10,000-20,000 per day when critical path activities were delayed.

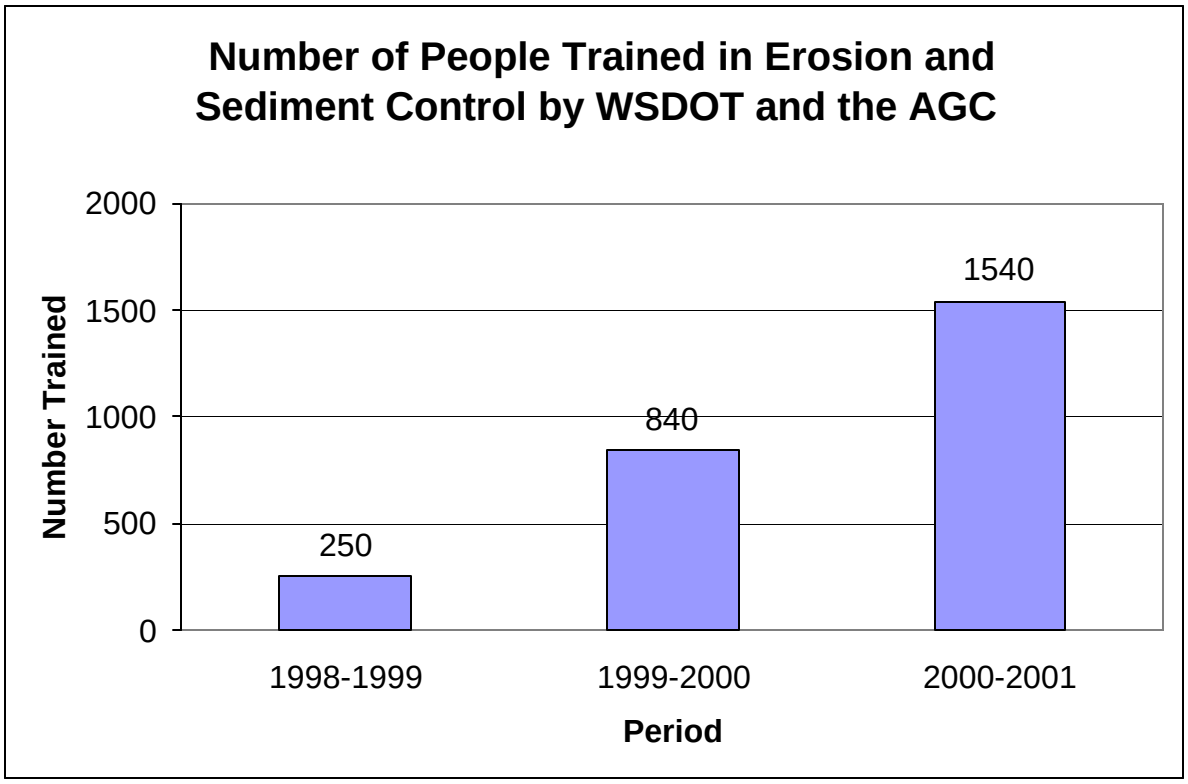
A final impact of erosion is WSDOT's reputation with the public, regulatory agencies and elected officials. The above-mentioned project was harshly depicted and widely distributed in the Seattle press as an example of WSDOT's performance in environmental protection.

Measuring the Erosion Control Program's Performance

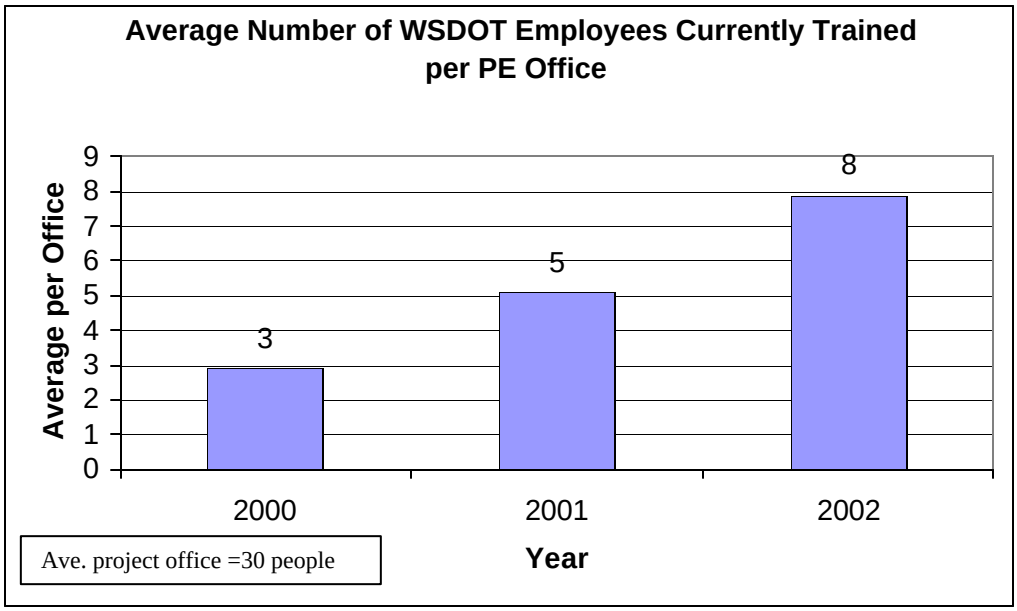
The mission of the Erosion Control Program is to aid in timely and cost-effective project delivery by helping prevent erosion problems. The major components of the Erosion Control Program include training, technical assistance, and policy review / development. Performance measures are described below for training and technical assistance.

Training

A critical factor to improve erosion control performance is training in the public and private sector. Since 1998, the number of people trained increased from 250 to over 1,500. The increase in 2000-2001 is largely due to agreements with outside training organizations that teach WSDOT's curricula to contractors and at no expense to WSDOT. In 2001 WSDOT trained 340 employees and outside organizations trained 1200 contractors and municipal employees.

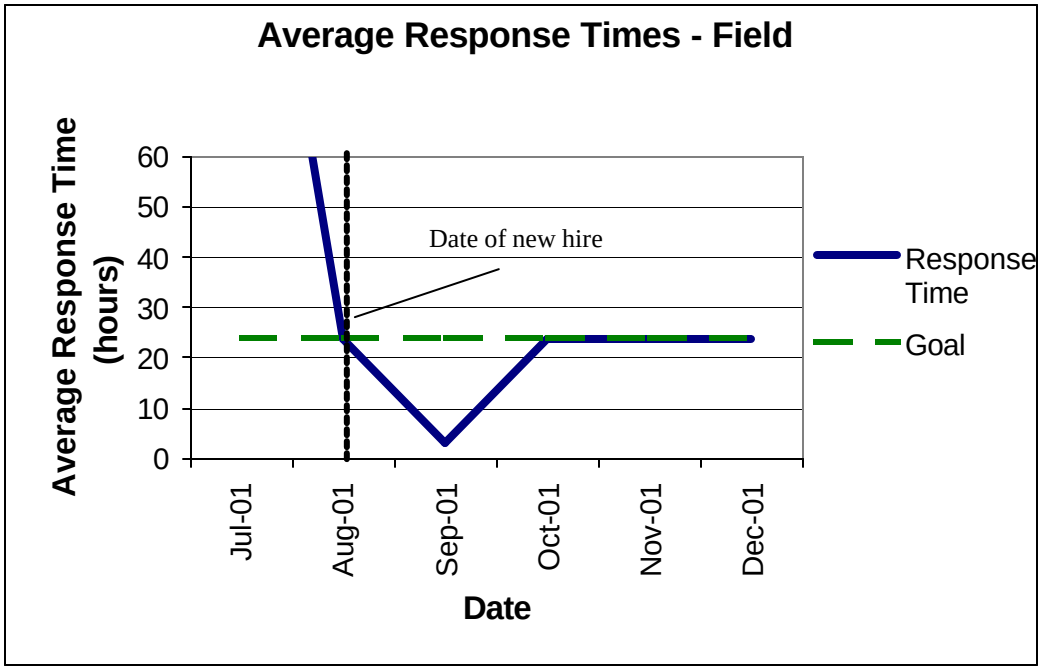


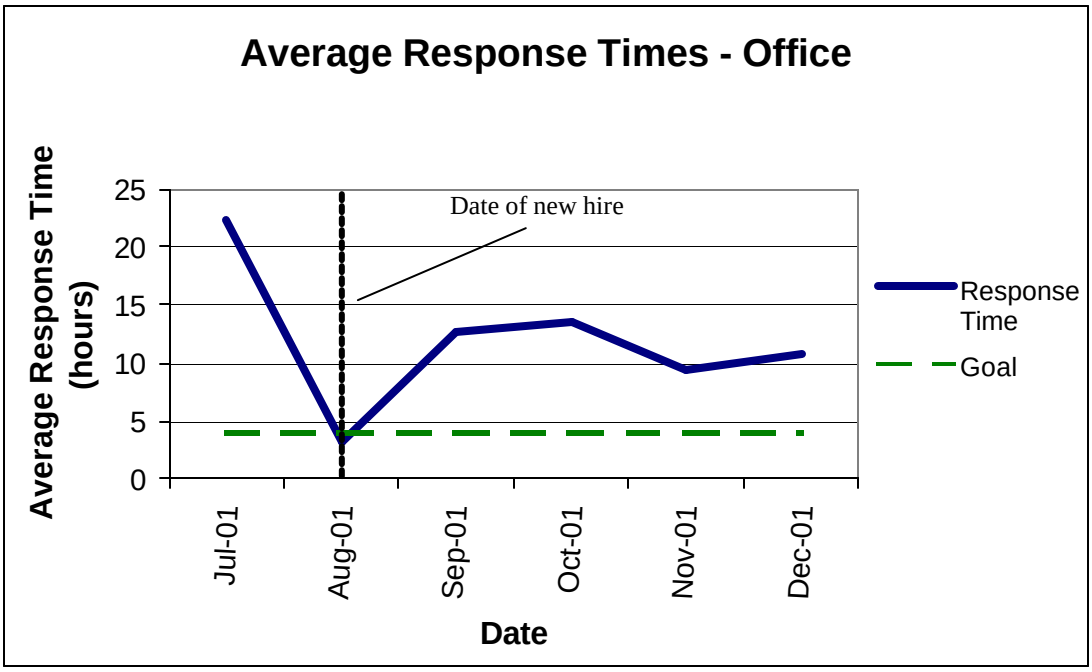
It is required that all contractors have certified erosion and sediment control (ESC) leads to receive WSDOT contracts. In 2001, all contractors working on WSDOT earthwork projects had ESC leads. In the past three years we have increased the number of trained people available to address erosion control in our project offices from three to eight people.



Technical Assistance

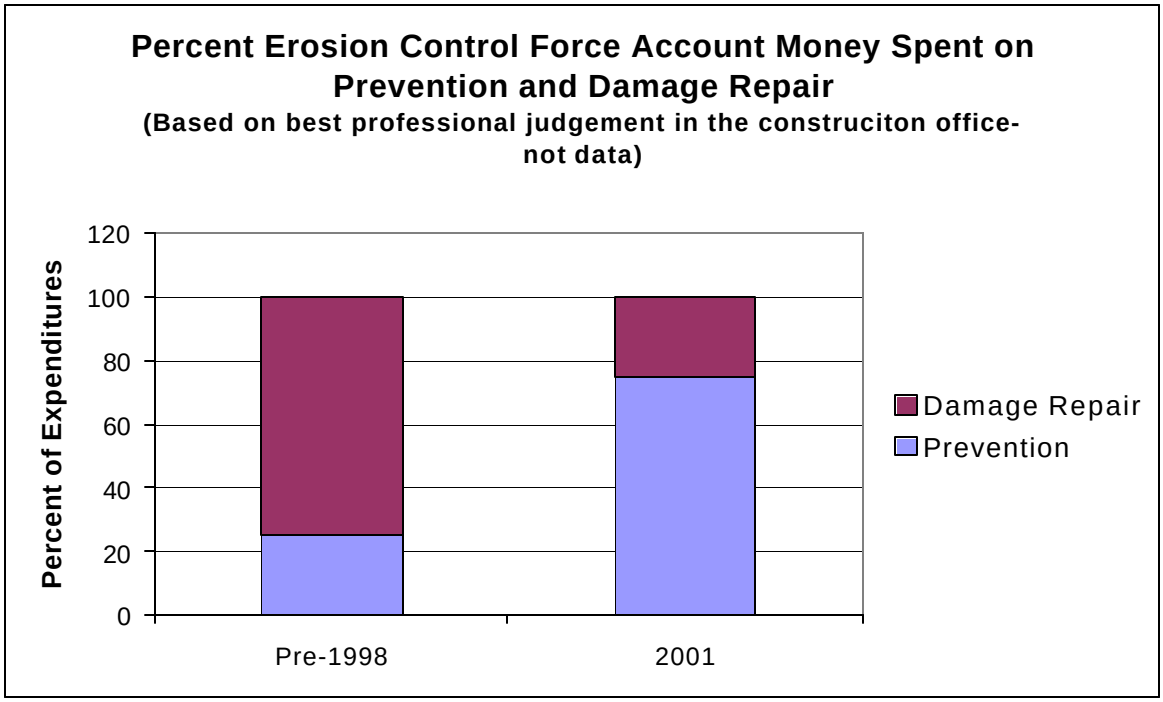
An important function of the Environmental Affairs Office's Erosion Control Program is providing technical assistance to WSDOT project offices. Technical assistance requests are addressed either in the field or in the office. The goals are to respond within twenty-four hours and four hours respectively. The figure below shows how our average response decreased as a second Erosion Control Program position was filled in August 2001. Site visit requests average one per week and requests for information average five per week.





WSDOT's Overall Performance (Site damage/Water quality/Offsite damage)

One way to determine how WSDOT is doing at protecting the stability of its projects is to look at how much is being spent on preventing erosion versus repairing damage. One such method is to look at standard item 6489 (Water Pollution Prevention and Control). Unfortunately, there are no means of itemizing individual erosion BMP's within this category. However, the construction office estimates that up until 1998, roughly 75 percent of costs were for repairing damage to projects and in 2001, approximately 75 percent of the costs were for preventing erosion. This is an important shift because erosion control is less expensive than repairing damage.



With respect to violations of water quality standards, in 2001, notices of violations from regulatory agencies dropped to one and no fines have been issued for erosion problems. It is an ongoing goal of WSDOT to avoid corrective action notices by preventing or quickly solving problems while working in full cooperation with the regulatory agencies.

Offsite damage is a difficult measure to assess given that unless lawsuits are awarded to affected third parties, it is usually unclear how much is spent to repair offsite damages. However, it is believed that offsite damage has also decreased.

WSDOT does track overall erosion control costs incurred as force account work ($3.5 million in 2001). WSDOT has traditionally underestimated the costs to prevent/solve problems. In the past few years WSDOT has significantly reduced cost overruns for erosion control while eliminating fines.

Doing What It Takes

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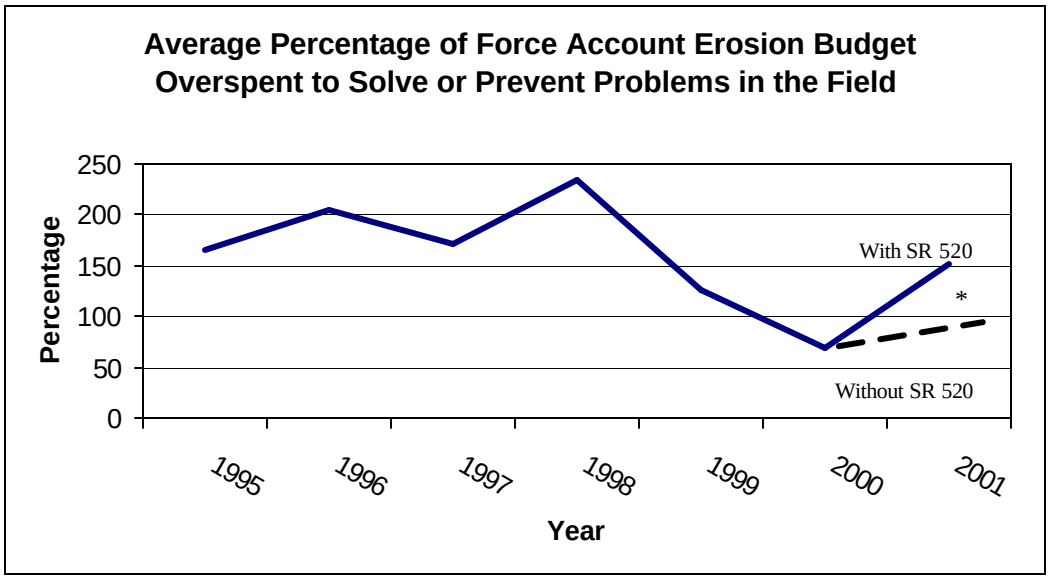
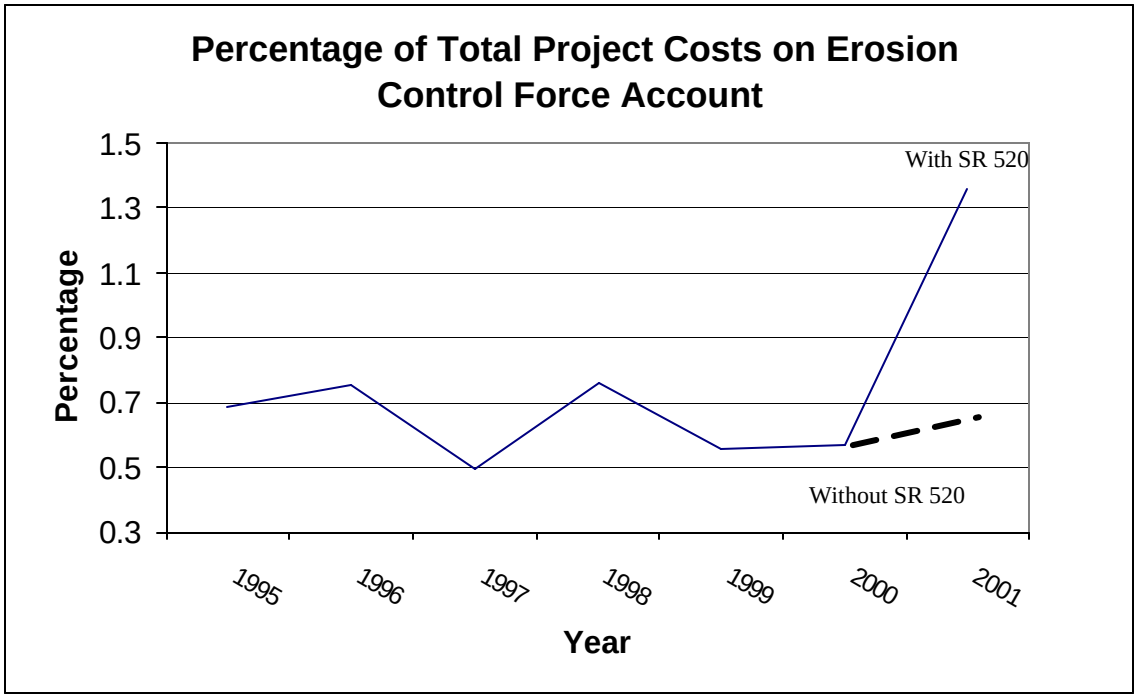
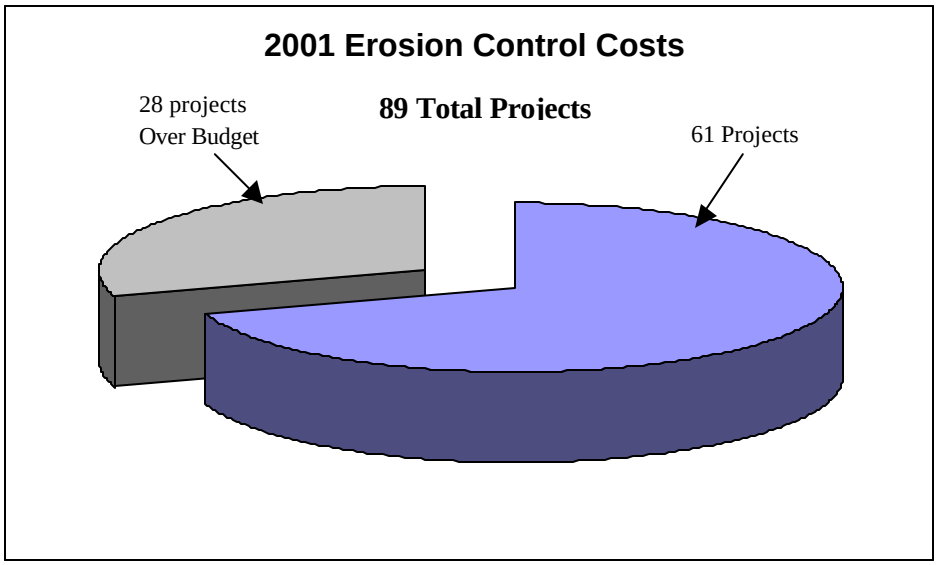


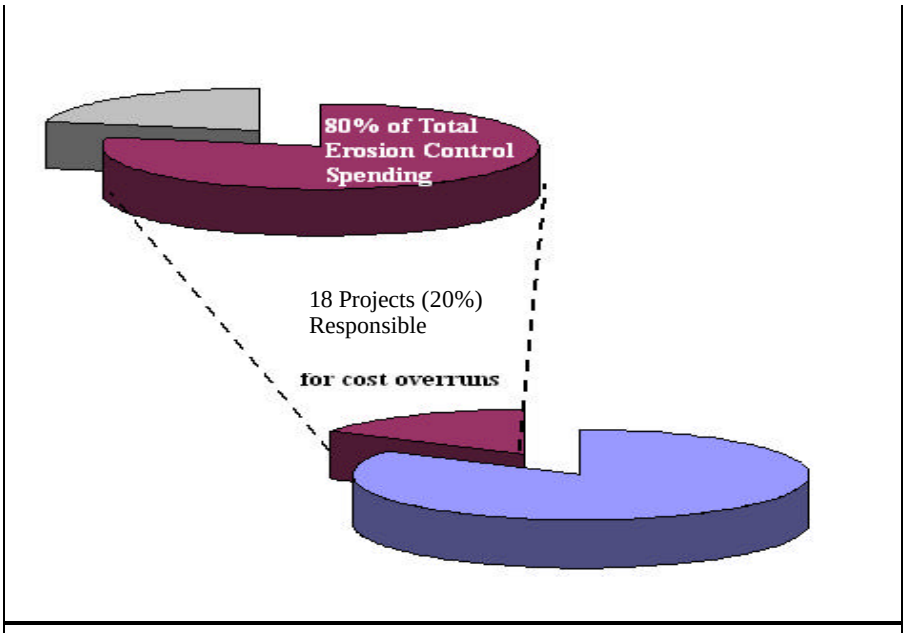
*The SR520 project was a unique case in which erosion control budgets were greatly exceeded in an attempt to meet local government requirements by adding vaults and chemically treating stormwater runoff. This project was adjacent to and following the 1997 project in which WSDOT had severe erosion problems.

WSDOT's improved erosion control performance has occurred without increasing force account costs. This is because most of our costs are now going towards preventing erosion instead of cleaning up damage.



Most of WSDOT's erosion control costs and problems are incurred on a minority of our projects. The challenge for WSDOT is to better identify and direct resources on the high-risk projects. If we improve our performance on the high-risk projects, we can continue to improve our performance while simultaneously reducing costs.





Where are we going?

A new cultural mentality is developing within WSDOT. This new mentality consists of planning and prevention for erosion. Further, it will improve project delivery, contain costs, and protect the environment. The Erosion Control Program provides people with the knowledge and contractual tools to avoid erosion problems. The Erosion Control Program will also provide the tools to both measure and improve performance.

How do we get there?

Training

- The Erosion Control Program will continue training staff and concentrate training on design staff to ensure that erosion risk assessment and planning is more accurate.

Technical Assistance

- Formalize site assessments into performance assessments. These assessments will provide performance measures for the implementation and effectiveness of legal, permit, and contractual commitment related to erosion control. In order to provide information on how to overcome deficiencies, these assessments will serve as "report cards" for project engineers and management. This information could also be shared with resource agencies or the public.

Policy Guidance

- Work with the construction and design offices to update their guidance documents and specifications.